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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,697	10/16/2003	Paul A. Kohl	62020-1550	7668
7590 Paul Reznick, Esq. THE WEBB LAW FIRM 700 Koppers Building 436 Seveth Avenue Pittsburgh, PA 15219		07/27/2007	EXAMINER LEE, SIN J	
			ART UNIT 1752	PAPER NUMBER
			MAIL DATE 07/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,697	KOHL ET AL.	
	Examiner	Art Unit	
	Sin J. Lee	1752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9,13-17 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9,13-17 and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/21/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Due to new ground of rejection, the following rejections are made non-final.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 13-17 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 13, applicants recite the step of removing portions of the photodefinable polymer to form the three-dimensional structure of *cross-linked photodefinable polymer*. Is this “cross-linked photodefinable polymer” the same as the photodefinable polymer mentioned in line 3 of present claim 13? That is, in the step of disposing a photodefinable polymer composition (the first step of present claim 13), are applicants disposing an already-crosslinked photodefinable polymer? If not, when does this crosslinking of the photodefinable polymer occur (since it does not occur on the exposure step –the exposure step of present claim 13 makes the polymer decomposable (i.e., removable), not crosslinkable)?

Also, in claim 14, line 4, by the phrase “the photodefinable polymer composition”, do applicants mean the *cross-linked* photodefinable polymer composition?

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Otani et al (JP 2001-226419 and its machine-assisted English translation provided by JPO).

Otani teaches (see abstract) a photocurable resin composition comprising a *polyester* resin and a photoinitiator. Specifically in Example 2 (see [0045]), Otani uses *phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide* (Irgacure 819) as the photoinitiator. Therefore, Otani teaches present invention of claim 9 (present application includes polyesters as one of examples for the present sacrificial polymer).

Response to Arguments

6. Applicants argue that Otani does not teach present sacrificial polymer because the role of Otani's photoinitiator is to induce a cross-linking reaction of the polymer not a bond breaking or fragmentation of the polymer. However, just because Otani's polymer goes through the crosslinking reaction by the photoinitiator that does not mean that Otani's polymer cannot be sacrificial polymer. For example, even in present specification (see pg.6), applicants still call the polymer "a sacrificial polymer" in embodiment where a negative tone photoinitiator is used ("[i]n general, negative tone photoinitiators can be used making *the sacrificial polymer* more difficult to remove."). Even though applicants argue that Otani's photoinitiator increases the thermal resistance of the polymer to make it more stable thermally, that does not mean that his polymer cannot be decomposed at all (there can be other methods than thermal decomposition). Present claim 9 is not a process claim, in which a polymer decomposition step is required. It is a product claim, which requires the presence of a photodefinable polymer including a sacrificial polymer (a decomposable polymer) and

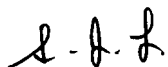
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either one of those two photoinitiators listed. Since Otani's composition contains a polyester resin (which present specification includes as one of examples for the present sacrificial polymer) and phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide, it is still the Examiner's position that Otani teaches present invention of claim 9.

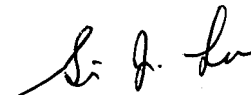
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is 571-272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



S. Lee
July 23, 2007



SIN LEE
PRIMARY EXAMINER